



# PROCEEDINGS

of the  
American Society  
of  
Civil Engineers

2 PARTS

PART 2

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## A Contribution

*It is with pleasure that prominent position is accorded in this issue of "Part II" to an article contributed by John Henry Quinton, Member of the Society.*

*This informal part of the Proceedings was evolved that the Society might take on in the minds of the membership more of the living personality which it really has. Hundreds, almost thousands, of the members are extremely interested in the Society and are ready to contribute to its activities and success. Mr. Quinton is the first to participate in this particular endeavor and his contribution is most welcome.*

## Making Ends Meet

### A Triumph of Resourcefulness Over Spitefulness

By J. H. Quinton, M. Am. Soc. C. E.

**T**HERE comes a tense moment in every engineer's life when the arch center is to be released, the tunnel holed through, the traverse closed, or the water turned on. What if it doesn't work?

The old Romans had a legitimate excuse when the headings missed and they found themselves digging two parallel tunnels where they had hoped there would be only a single hole. Modern engineers, too, now and then need (and find) a legitimate excuse; but I knew one modern engineer—although it was in the last century—who had to have more than an excuse to hold up the dangling corner of his bridge. And thereby hangs a tale heretofore unpublished.

Three engineers, an inspector, and a commission of farmers were the principal characters in this story. First, there was the consulting engineer, but he didn't cut much figure—that is, in the story. His work was practically done, and well done, too, before I knew much about the job. Then there was the contractor's

partner, a most capable although comparatively young engineer; a man with a brilliant future—if it hadn't been for that bridge. And, lastly, of the engineers there was myself, a young chap just starting out and acting as contractor's engineer on the job.

As often happens, an engineer didn't make the blunder but he paid the penalty. The bridge was in a Pacific Coast State. Although light, it was well designed. The inspector was old, and ignorant, and had a previous grudge against the Consulting Engineer. Only the commission of three political farmers knew why he was appointed. Thus, any success for this enterprise had to be gained in the face of joint spite and ignorance, with only engineering resourcefulness as a positive influence.

Fortunately, the contracting firm was reliable, consisting of an old experienced bridge builder besides the young engineering partner. The concrete piers for this particular

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## The Annual Meeting

**T**HE 1927 Annual Meeting dates are January 19, 20, and 21.

Wednesday morning is reserved for the Business Session, during which occurs the presentation of prizes and medals for papers contributed and appearing in Vol. 89 of Transactions. Wednesday afternoon is given over to reports from the Special Committees of the Society.

The President's Reception and the Dinner Dance on Wednesday evening are usually attended by about 450 persons and provide an opportunity for all to meet the newly-elected President and to make acquaintances which may be cemented into friendships in the course of the next two days' meetings. This year, these functions will be held at the Hotel Plaza.

Thursday is given over entirely, morning and afternoon, to the Technical Divisions. Seven Divisions will hold meetings of a business and technical character. On Thursday evening about 900 men will fill the Auditorium and if the "show" is as good as it was last year, an armory will be needed hereafter. After the "show" the rooms on the fifth floor will be packed by those same 900 men renewing old acquaintances and making new ones. The noise of conversation is great and the smoke is thick. On Thursday evening the ladies usually go to a real show at one of the theatres.

Friday is always "Excursion Day" and the attendance of members, ladies, and guests is generally over 400. To many, this is an annual event. Special attention is given throughout the meeting to the ladies. Morning trips, afternoon trips, or matinees, are provided, and the "Tea," also to be at the Plaza, gives them a good opportunity to meet each other.

On Monday and Tuesday (preceding the Society meeting) there is a meeting of the Board of Direction, the "Outgoing Board"—and on Thursday the "Incoming Board" meets. Tuesday evening the Past and Active Officers have an informal dinner and evening together and on Friday evening alumni of several of the colleges have annual dinners. All in all—it's a busy week.

The Local Committee on Arrangements consists of: Theodore R. Kendall, Chairman; George L. Lucas, Vice-Chairman; E. D. Case, Willard T. Chevalier; Dean G. Edwards; John F. Gowen; Albert B. Hager; Harold M. Lewis; William F. Reeves; John R. Slattery; Merritt H. Smith, and Harry D. Winsor.

## Are You Up to Date?

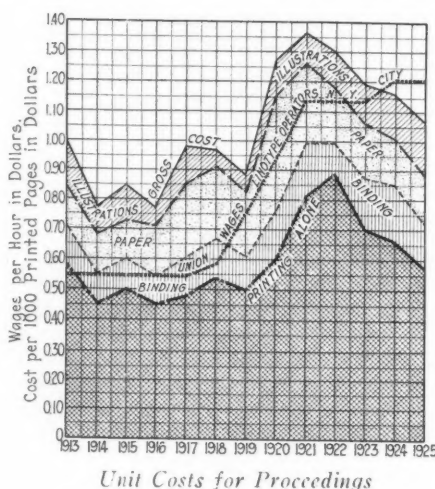
**T**O the member who feels he is out of touch with what is going on in Civil Engineering because he lives "so far out of the way," or for some other reason, the following is earnestly addressed.

Look on page 505 of Part I of the Proceedings for December. There are listed 49 periodicals devoted to engineering and on the following pages are the titles of articles classified according to subject.

At Society Headquarters, two assistants devote a part of their time to scanning these magazines—English, French, and German—and to listing those articles which are civil engineering in character. It is felt that the list includes the principal current articles on civil engineering by which one can keep up to date. From this list a member should be able to select those that appear to be of interest to him personally, and thus economize his time, in that he may go directly to the magazine which he wishes to examine.

Should the publication needed be unavailable to any member, photo-prints of the article desired will be forwarded from the Society's library at a moderate charge. The list appears in each number of Proceedings, covering those magazines received since the previous issue.

Mr. Clemens Herschel, Past-President of the Society, comes to Headquarters faithfully each month and personally revises the allocation of the several articles noted, to their respective places in the classified list.



## Publication Costs

### A Gratifying Development

**A** MOST interesting and profitable effort has been going on for the past four years at Society Headquarters. The Office Manager and the Editorial Department have been endeavoring to get the printer's point of view as to the cost of the Society's publications. Once an understanding of his difficulties was obtained, remedies were devised until as a result a 36% reduction in expense to the Society has been effected in the face of a 6% and probably greater increase in printers' wages.

During the war, all costs jumped excessively and the cost of Proceedings and Transactions followed automatically. With the co-operation of the printer, however, item by item, expenses were studied and means found to effect economies that were large in their accumulated value.

The details, of course, are many and intricate; but one of the economies effected has been in "author's changes." It is now the practice to submit all manuscripts after editing to the author and to persuade him to give the matter his second thought before it is set up in type. The reduction in costs for alterations has been very marked.

Another large economy has been effected in minimizing the number of folding plates. This also has its reason—each folding plate (as published) costs the Society about \$260. In 1922 there were 39 such plates; during the last three years the average has been 8 and so far during 1926 there has been only 1.

These are only two of the many

points, seemingly unimportant in themselves but each requiring labor to effect, the elimination of which has resulted in net savings in cost. The accomplishment is plainly shown in the graph. The cost per 1000 pages is not down to pre-war level, but the relation of printers' wages to printing costs is very marked.

It is important to state that these really startling economies were effected only with the unquestioned support of the printer. With the Evening Post Job Printing Office, the Society has had more than 54 years of uninterrupted printing relations, and with its President, John Noltz, more than 45 years, a fact of which both parties are proud.

## December Proceedings

**T**HE paper by Charles E. Sudler, M. Am. Soc. C. E., entitled "Storage Required for the Regulation of Stream Flow" seems to fill a definite need. Ordinarily such computations have to include a series of hypothetical possible cases and so are quite laborious. Mr. Sudler's method and the complete set of diagrams shorten the work immensely.

Mr. Davison's Presidential Address on "A Century and a Half of American Engineering" covers an extensive field both as to time and scope of engineering work. As a brief historical review, this gives much cause for pride in the accomplishment of American Engineers.

The various discussions from 41 engineers, mostly members of the Society, deal with a wide range of topics, 21 different subjects being represented. In addition, the memoirs of 11 deceased members complete the December number of Proceedings.

One important feature in this, as in all December issues, is the set of indices covering the contents of Proceedings for the entire current calendar year. Items are arranged both as to author and subject.

Another item which should interest members is the Substitute Amendment proposed by the Committee to which were referred, at the 1926 Annual Meeting, the three conflicting amendments with respect to the nomination of Society officers.

## The Employment Service

### A National Institution

**A** FEW figures about the Employment Service may be of interest. There are three offices now in operation—at New York, Chicago, and San Francisco.

Applications filed, that is, men newly registered, are about 230 per month and men placed are about 125 per month. That means roughly that half the men asking assistance in locating a position secure it directly through the efforts of the Service. Positions open and made known to the Employment Service average about 390 a month, so it may be said that there are about 620 new clients each month to 250 of whom complete compliance with their requests is afforded.

The handling of 620 new requests a month is no small job and involves forwarding between the interested parties over 8,000 pieces of correspondence each month; that is, about 320 each working day.

The Employment Service as a National institution is managed by the Secretaries of the Civil, Mining, Mechanical, and Electrical Engineering Societies, who also manage the New York Office. The Chicago Office is managed by the Secretary of the Western Society of Engineers and one representative of each of the four mentioned Societies (for the Civils, in Chicago, Col. Henry J. Burt, Member) and in San Francisco, similarly by representatives from each of the four Societies (for the Civils, in San Francisco, Mr. Frederick Hall Fowler, Member). For these gentlemen it is a labor of love—a service rendered the profession.

## Student Chapters

**B**EGINNING with the October issue of these "News and Notes of the CIVIL ENGINEER," as we like familiarly to style "Part II" of Proceedings, the edition was raised to 17,250 copies.

The regular membership requirement is nearly 12,000 and the increase was made to provide a copy for each of the members of our Student Chapters, nearly 5,000 in number, and to leave a few extra copies for unusual demands.

In 86 universities there are now Student Chapters of the American

Society of Civil Engineers, approved by the Board of Direction. The actual present membership in these chapters is not known because, as will be appreciated, the personnel changes each year due to the graduation of some students and the advancement of others. "News and Notes" are now being sent in bulk by express or parcel post to the Faculty Sponsor, or to the officer of the Student Chapter designated by him, for distribution to the members.

The formation of Student Chapters at engineering schools was authorized April 21, 1920. The first request came from Stanford University and authority for the organization of this Chapter was granted June 1, 1920.

Since then the growth has been: 8 chapters in 1920; 31 in 1921; 12 in 1922; 12 in 1923; 5 in 1924; 8 in 1925; and 10 in 1926—a total of 86 chapters.

## Ballot for Officers

**Q**UERY arises as to why the need for the final ballot for officers which will be issued during December and canvassed at the Annual Meeting.

There are two obvious reasons. First, it is a requirement of the State of New York, under the laws of which the Society is incorporated, that for corporations of which the character is that of membership, scattered widely throughout the country and even other countries, the officers on the governing board of such corporation must be elected by the members as a whole and not by members segregated territorially. They may be selected, or nominated, by members resident in Districts, but must be elected by the entire membership.

Another obvious reason is to permit of "Nominations by Declaration," or the making of nominations in addition to those made in the regularly prescribed manner. The Constitution of the Society provides that such nominations may be made by a declaration signed by at least twenty-five Corporate Members and accompanied by an acceptance of the nomination signed by the nominee.

Aside from the necessity for a final ballot, there is the more sentimental point of view that such a vote is a matter of pleasurable courtesy accorded those who are willing to give the time and thought necessary to act as officers of the Society.

## A Service to Members

**C**OLLECTION charges on checks, although small of themselves, may accumulate to quite a sizable sum for an organization handling so many checks for dues and other accounts as does the Society.

Checks drawn on banks in the Territory of Hawaii, for instance, of which approximately twenty-five are received each year, are subject to a collection charge varying from 10 to 35 cents each. By an arrangement with the Society's bank, however, these and all other checks subject to deduction for similar reasons are credited both by the bank and on the Society's books at face value. At the end of the month, the several deductions are grouped and entered by the bank as a debit against the Society's general account and on the Society's books as an expense under "Current Business."

The variations in the rates of foreign exchange sometimes work even further to the disadvantage of the Society. Feeling that members resident in foreign countries are under some disadvantage in several respects, the rule has been made to accept at par all checks on which the collection charges and the rate of exchange combined do not result in an expense greater than seventy-five cents.

It is felt that a member living, for instance, in Japan, who draws his check for so many yen should not be asked to remit further an amount equivalent to perhaps sixty-three cents because of collection charges and the rate of exchange which prevailed at the moment the check was cashed.

Collection charges are in force also for many points within Continental United States. These, too, are absorbed by the Society, giving the member credit for payment in full. During the year 1925, these costs accumulated to \$61.80, an amount it is felt well worth while expending, not only as in line with the general policy of "the membership be served," but in the elimination of such details as are permissible from the duties of the three persons engaged in the bookkeeping department of the Society's staff at Headquarters.

THE ANNUAL MEETING  
January 19, 20 and 21, 1927  
NEW YORK



## Local Sections Exchange Courtesies

**T**HE Los Angeles and San Diego Sections exchanged courtesies in October in a manner that might well be more generally adopted.

On the evening of October 13th, five members of the San Diego Section motored to Los Angeles to be the guests of the Local Section in that city at its regular meeting, and on October 30, eighteen members of the Los Angeles Section, with their wives, were entertained in San Diego. The two cities are neighbors—about 125 miles apart.

The members of the Texas and North Carolina Sections have quite frequently made real pilgrimages to meet each other, but perhaps this is the first time that one Section has been the guest of another and made a real party call in return.

## Making Ends Meet

(Continued from page 1)

bridge were in the shape of a pair of cylindrical pedestals connected by a generous sized vertical wall or diaphragm. This diaphragm did not suit the crabbed inspector, who wanted the pier filled in solid. His insistence won over the commissioners, but not the engineer partner who was aghast at the idea of enlarging the pier and not the foundation. Finally, the commission offered to defray all the extra cost, and, over the engineer's protest, the senior partner yielded.

So the pier was changed and the engineer's worst fears were realized. It settled unequally, so much so, in fact, that one side skewed lengthwise of the bridge, leaving a gap of fully 9 inches between the edge of the pier and the bed-plate attached to the end of the truss, which was already on falsework waiting to be anchored. The story is easy to tell now but the reality then was a matter of tremendous importance to the conscientious engineer partner. A few days after this situation became known, he was found dead.

The commissioners were not only ignorant but obstinate. To prove to them that the settlement was not imaginary, I rigged up a long lever arm, magnifying the movement. "Seeing is believing" to men of such

calibre. When they had watched this truth-telling pointer move  $3\frac{1}{2}$  inches in an hour, they became thoroughly frightened. The old inspector was discharged.

To remedy the situation, it was decided to remove the top 50 feet of the pier and replace it by lighter iron cylinders, filled with concrete. Imagine with what trepidation I followed my measurements as the pier again approached completion. The tragic death of the contracting engineer had unnerved me, and I dreaded the outcome of this new expedient. It was more than apprehension; my feelings bordered on alarm. Sure enough, again a pronounced movement ensued. The leaning of the new pier, when completed within a few feet of the top, apparently would cause the bed-plate to project fully 4 inches over the edge—an impossible situation.

What to do in this emergency was a poser for me. I knew that if this disturbing fact became generally known the whole work might be called off then and there. So it seemed to devolve upon me to do some solid thinking and to come to a quick decision. It was evident that once the spans were connected to this pier, settlement would cease to be unequal, and I decided that, as the steelwork couldn't be stretched to make it reach, it was the pier top that must be stretched—in a way.

Early next morning, with the foreman (my only confidant) I accomplished this feat quite neatly. With a screw-jack and some blocks we distorted the unfilled top of the cylinder to an elliptical shape—imperceptible to the casual eye but just enough to fit. That day, the casing was filled to the top with concrete, and the bed-plates laid in their proper places.

In due time, the spans were placed upon the piers, and the whole structure gave good service for thirty years, in fact, until it was removed to make way for a stronger bridge to withstand the heavier modern traffic. No one else but the foreman ever knew of this little stratagem.

It may be said that this incident was figuratively and literally a case of "making ends meet." The principal actors in this little play—a real tragedy in its way—are now all dead, except the foreman and myself. Even the old inspector, who was the cause of all the mess, has long since gone where "the wicked cease from troubling." *Requiescat in pace.*

## Order Your Christmas Pins Early

**C**HRISTMAS is quite a popular time for buying new Society badges or replacing old ones. If any member has this in mind he should take warning that Christmas time is the busiest season for jewelers and engravers and that his order should be sent to the Secretary's office without delay. Should he do so, it is highly probable that the order could be put through in time and the engraving properly done.

According to the Society rules, no member may have two badges. If you wish the new pin to replace an old one, please so state in your letter to the Secretary. If, however, you wish a new badge in place of your present one, it is necessary to turn in the old pin for which a refund of \$1.25 will be allowed.

## Friendships Valuable

**T**HE President of the Society recently devoted a week to visiting, with the Secretary, several of the Local Sections and Student Chapters.

Ten meetings, with attendance totaling approximately 800 persons, were addressed. At the general meetings, President Davison's remarks were on the broad subject of "The Engineer and Industry," but in the more family-like gatherings with the members of the Local Sections his principal theme was the merit of the Local Sections as affording an unusual opportunity for the members of the Society to learn to know each other more intimately as engineers, friends and team-mates.

Mr. Davison remarked frequently upon the value of friendships among Society members as not only making life more interesting but as affording opportunities both to help and be helped. The Secretary spoke on recent developments in Society affairs.

The largest gathering was the Annual Banquet of the Student Chapter at the University of Wisconsin with attendance of about 175 members of the Chapter, guests, professors and members of the Society resident in and around Madison. Such a gathering, with the student songs, sky-rocket cheers, and warm enthusiasm, was an inspiration to the speakers who in turn gave of their best.

